ATOMIC ENERGY newsletter®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

April 2nd, 1957
Vol. 17... No. 4

Dear Sir:

Treaty officially forming European Atomic Energy Community (Euratom) was signed in Rome last fortnight by the six nations who have also joined in forming a European Economic Community--France, W. Germany, Italy, Belgium, Holland, and Luxembourg. (Preceding these ceremonies, however, Euratom representatives had visited U. S. and U.K. atomic energy people making known their needs for Euratom's nuclear power development program. The program involves construction of nuclear power plants with total generating capacity of 15 million kilowatts to be available for the energy needs of these six nations within the next ten years. Both the U.S. and the U.K. have offered to supply these nuclear power stations, the necessary uranium fuel, and the services of nuclear energy experts. It is understood that Euratom has decided to go ahead with both the U. K. and the U. S. types of nuclear power stations.) (Other INTERNATIONAL ATOMIC ENERGY NEWS, p. 3.)

New $200,000 facility designed to process radioisotopes exclusively for the medical field is nearing completion by E. R. Squibb division of Olin Mathieson. First products offered will be radioactive gold, iodine, and phosphorous; shipments are to start in near future. (First pharmaceutical firm to offer medical profession radioisotopes was Abbott Laboratories, with special organization established in Oak Ridge. Last year Abbott's radio-pharmaceutical division introduced such new products as a diagnostic kit containing radioactive B-12 in capsule form for tests for pernicious anemia, and a capsule containing a therapeutic dose of iodine for treatment of thyroid cancer. The division also developed a special syringe for safe injection of beta-emitting isotopes.) (Other PRODUCTS, PROCESSES, INSTRUMENT NEWS, p. 5).

Great Britain will buy $115,000,000 worth of Canadian uranium concentrates in the next five years, the two nations announced at the end of a two day conference in Bermuda last week between Britain's Prime Minister MacMillan and Canada's Prime Minister St. Laurent. Negotiations had been in progress for over a year. It is understood that further purchases will follow, since the $115,000,000 contract is not a ceiling. Fulfilment of this British contract will be made possible by the U. S. foregoing delivery of some of the uranium concentrates that it had contracted to take, since practically all Canadian uranium production now goes to the U. S. under contracts to run until 1962. (The U. S. also has first call on options to take all Canadian production for four years thereafter.) The British order will be filled by Eldorado Mining & Refining, the official Canadian Government buying and selling agent for all uranium concentrates, out of existing contracts totaling nearly $1.5 billion which Eldorado has with some 18 Canadian uranium mines; no new contracts will be let with Canadian mines by Eldorado.

Vitro Corp. of America, diversified atomic energy firm, had order backlog of $114 million on Dec. 31, 1956 compared with $29 million a year earlier, according to J. Carlton Ward, president. The company's net for 1956 also increased to 75¢ a share from 67¢ in 1955, despite special charges of $625,000 to cover write-offs of uncompleted construction contracts.

ATOMIC ENERGY BUSINESS NEWS...

NEW PLANT TO PRODUCE MATERIALS FOR NUCLEAR FUEL ELEMENTS:- First privately-owned plant in the U.S. to produce raw materials for nuclear reactor fuel elements is to be built at Erwin, Tenn., by W. R. Grace & Co., New York, with all financing by Grace; similar units have previously received some measure of help from Government agencies. The Erwin plant output will be uranium, thorium, rare earth alloys and metals for nuclear reactors, and will be an addition to Grace's rare earth and thorium operations at its Pompton Plains, N.J., and Curtis Bay, Md., facilities. Erwin will have solvent extraction plant to produce pure thorium and uranium salts; reduction plant for converting salt to metal powder or sponge; and melting-casting unit to produce fabricated metal product.

INSURANCE FOR NUCLEAR OPERATIONS UNDER DISCUSSION:- Joint Congressional Committee on Atomic Energy held hearings last week in Washington on the Anderson-Price nuclear hazard insurance bill which would authorize the Government to provide up to $500 million in third-party liability coverage on nuclear plants. (Coverage would supplement the present limit of commercial underwriting on such liability which is now about $65 million.) In addition to USAEC representatives, some 20 industry witnesses testified.

Insurance underwriter approval and support of the bills was given by the Associated Factory Mutual Fire Insurance Companies, a group of large mutual property insurance companies who expect to insure substantial property in the atomic energy field, and who told the Committee that the bills are "imperative if the atomic energy program is to go forward". (These companies are members of the Mutual Atomic Energy Reinsurance Pool, and of the Nuclear Insurance Rating Bureau; rates of the latter govern underwritings of the Pool on nuclear risks.)

Industry support for the bills came from General Electric Co., whose Francis K. McCune (v-p and general manager, atomic products division) said they were of especial importance to G-E which has already spent more than $20 million on commercial atomic development and by mid-summer will have spent a total of $33 million. Mr. McCune noted that his company's contract with Commonwealth Edison for construction at Dresden, Ill., of a $45 million nuclear power plant has termination clause for both parties which may be invoked December 1957" if satisfactory liability protection is not then available". The presently available commercial limit of $65 million is not considered adequate by G-E.

(Meanwhile, Maritime Administration has begun preliminary study of the insurance problem as it relates to nuclear powered merchant ships. It will ask marine underwriters whether the problem can be handled privately, or if Government indemnity for third-party liability will be necessary as appears to be the case for nuclear power plants.)

CANADIAN URANIUM MINING STOCKS SHOW STRENGTH:- Based on reports of assured purchases of Canadian uranium by Great Britain (p. 1, this LETTER), Canadian uranium mining stocks showed greatest strength of the year. Easson's uranium index last fortnight reached 349.9, high for the year; this compares with 1956 high of 268.7. (Low for 1957 was 268.6; for 1956, low was 190.4). On the Canadian exchanges, Consolidated Denison went above $23 for a new high. Strength was also evident in Can-Met, and Gunnar. Faraday and Northspan, both with Canadian and American Stock Exchange listings, moved up fractions on strong buying.

COURSES, CONFERENCES...in the nuclear field...

COURSES:- Nuclear Reactors and Radiations in Industry, an intensive Summer course offered by University of Michigan, Ann Arbor, Aug. 19-30, 1957, is designed to introduce the engineer in industry with no previous training in nuclear technology to representative techniques and problems in the field. Details from Engineering Summer Conference Office of the University.

Principles of Radioisotope Utilization, starting July 8, and Nuclear Reactor Technology, starting June 24, are two 2-week courses offered this Summer by Massachusetts Institute of Technology, Cambridge, Mass. Further information from the office of the Summer session, M.I.T.

CONFERENCES:- International conference on use of radioisotopes in research, to be held by UNESCO, September 1957 in Paris, will deal with radioisotopes in the physical sciences and in the biological sciences, and will provide a broad exchange of information on their uses as instruments of research, as tracers, or as sources of radiation.

BIDS ASKED, CONTRACTS AWARDED, SURPLUS PROPERTY... at nuclear projects...

BIDS ASKED:- Bids are asked by USAEC, Idaho Operations (Idaho Falls, Idaho) for construction work in the chemical processing plant area of the national reactor testing station there. Work will be under contract no. AT(10-1)-901.

BIDS SUBMITTED:- Columbia Basin Natural Gas Co., Inc., has received license to supply Richland, Wash., with domestic and commercial supplies of natural gas following successful bid made by the firm; company had been selected over other bid made by Hallmac Construction Co., Houston, Texas. License issued Columbia Basin is for 50-year period; Richland Council and USAEC concurred in its issue. Agreement provides for payment by gas supplier of 4% of gross receipts; until Richland, which is the "Government town" supporting Hanford Plutonium Works, becomes a city, U. S. Government will receive payments. President of Columbia Basin is J. R. Lowe, Corpus Christi, Tex., with R. M. Hutchinson, Houston, Tex., vice-president and director.

CONTRACTS AWARDED:- Contract to furnish, fabricate and erect structural steel for the Argonne low power nuclear reactor, at the national reactor testing station, Idaho Falls, Idaho, has been awarded Chicago Bridge & Iron Co., Salt Lake City, Utah. Firm submitted low bid of $167,400, with three bids received.

New uranium exploration contracts totalling $157,773 have been awarded by the Defense Minerals Exploration Administration to four companies: Uranium Enterprises, Jefferson County, Colo., $11,700; Treasure Uranium & Resources, Inc., McKinley County, N.M., $25,832; Bleak Uranium Co., Inc., San Juan County, Utah, $73,603; and Walter Duncan Mining Co., San Juan County, Utah, $46,608.

SURPLUS REAL PROPERTY OFFERED:- Portion of the USAEC's Hanford Plutonium Project area, located about two miles south of Richland, Wash., and consisting of about 25.02 acres of semiarid grazing land and gravel pits, is offered for sale by General Services Administration, Seattle, Wash. Identified as tract RR-4 Part, sale is no. 10PS-116..... Another property, also portion of Hanford Project, is also offered by the GSA. It is in Prosser, Wash., and consists of 160 acres of wheat land. Identified as tract KK-751-Part, sale is no. 10PS-139.

INTERNATIONAL ATOMIC ENERGY NEWS...

GREAT BRITAIN:- Nero, new experimental low energy reactor, is now operating at Atomic Energy Research Establishment, Harwell. Its experimental program will include investigations of physics design problems associated with the more advanced types of graphite moderated nuclear power reactors now being studied by the U. K. Atomic Energy Authority, including problems associated with the design study of a sodium cooled graphite moderated reactor. Industrial firms which worked with a Harwell team on the project include Saben Hart & Partners, Ltd., London, and Technical Design & Tool Co., Ltd., Reading, detail design work; Messrs. March, Ltd., Reading, steel fabrication work; R. O. F., Nottingham, roof trolleys; and H. M. Hobson, Ltd., Wolverhampton, control mechanisms.

Governing board of the National Institute for Research in Nuclear Science, at its first meeting in London recently, has appointed physics committee to examine proposals and designs for construction in Britain of a large accelerator. (Chairman of the Institute is Lord Bridges, with representatives from the Royal Society; Department of Scientific and Industrial Research; and from universities. Facilities of the Institute will be those which are beyond the scope of universities and institutions carrying out nuclear research.)

Present usage of radioisotopes in Great Britain is not producing sewage exceeding maximum permissible levels of irradiation, Arthur W. Kenney, radiochemical inspector of the Ministry of Housing told a recent meeting of the British Nuclear Energy Conference. Mr. Kenney discussed behaviour of radioisotopes in sewage treatment and disposal of radioactive wastes. He observed that at present, no effect on sewage-purifying organisms has been observed. He noted that behaviour of radioisotopes during sewage purification has been determined, and that the amount taken up on the sewage filters or on activated sludge is not sufficient to be hazardous to workers. There would be a danger, he pointed out, if there were a build up of a long-lived radioisotope such as cobalt-60.

BRAZIL:- Bill has been forwarded to Congress by the President authorizing credit of Cr $150 million to enable the National Commission of Nuclear Energy to purchase uranium and thorium ores and concentrates.

ATOMIC ENERGY PATENT DIGEST...latest grants, other news...

Process for separating uranium from other metals by hydriding. U. S. Pat. No. 2,785,046 issued Mar. 12, 1957; assigned to United States of America (USAEC). (Application date: Sept. 29, 1944.) (Inventor: Thomas A. Butler.)

Method of separating plutonium from contaminants. U. S. Pat. No. 2,785,047 issued Mar. 12, 1957; assigned to United States of America (USAEC). (Application date: Sept. 13, 1948.) (Inventors: Harrison S. Brown, Orville F. Hill.)

Gas recovery system for cyclotron. U. S. Pat. No. 2,784,799 issued Mar. 12, 1957; assigned to United States of America (USAEC). (Application date: Mar. 26, 1954.) (Inventors: John Ise, Jr., George P. Millburn.)

Method of forming crucibles and reaction chambers for production of uranium of high purity. U. S. Pat. No. 2,785,064 issued Mar. 12, 1957; assigned to United States of America (USAEC). (Application date: Dec. 8, 1944.) (Inventor: Harley A. Wilhelm.)

Preparing metallic beryllium composition. U. S. Pat. No. 2,785,065 issued Mar. 12, 1957; assigned to United States of America (USAEC). (Application date: Nov. 14, 1945.) (Inventors: Frank H. Spedding, Harley A. Wilhelm, Wayne H. Keller.)

Bismuth phosphate process for separating plutonium from aqueous solutions. U. S. Pat. No. 2,785,951 issued Mar. 19, 1957; assigned to United States of America (USAEC). (Application date: Jan. 26, 1944.) (Inventors: Stanley G. Thompson, Glenn T. Seaborg.)

Process for producing pure uranium metal. U. S. Pat. No. 2,785,972 issued Mar. 19, 1957; assigned to United States of America (USAEC). (Application date: June 12, 1945.) (Inventors: Charles H. Prescott, Jr., John A. Holmes.)

Preparation of flavonoid glucosides. U. S. Pat. No. 2,786,832 issued Mar. 26, 1957; assigned to United States of America (USAEC). (Application date: Oct. 6, 1953.) (Inventors: Simon H. Wender, Daniel W. Fox.)

PATENT NEWS:- Further details have been obtained by this LETTER concerning what is believed to be the first transaction of its kind involving privately owned patents in the nuclear reactor field. This LETTER stated (March 5, 1957) that Dow Chemical Co., Midland, Mich., had bought British and Dutch nuclear patent grants and pending applications of Constantin Chilowsky. The sale of these patents, we now learn, was actually made by Mr. Boris Pregel, president, Canadian Radium & Uranium Corp., New York, to whom they had been assigned. In addition to Britain and Holland, patent grants in six other countries were involved: Argentina, Belgium, Brazil, Italy, Switzerland and Union of South Africa. (The grants cover sodium-potassium alloys used as heat transfer materials, and methods of obtaining suspension of uranium particles in the agglomerated mass in a nuclear reactor.)

NEW BOOKS & OTHER PUBLICATIONS...on nuclear energy subjects...

Radiological Health Handbook, compiled & edited by Simon Kinsman et al. Project of Sanitary Engineering Center (Cincinnati), radiological health training section, U. S. Public Health Service. 355 pages. No. PB-121784. --Office of Tech. Services, Wash. 25, D.C. ($3.75).

Scintillation Counters for Radiation Instrumentation. Final report on research done under Government contract by RCA Laboratories, Radio Corp. of America, Princeton, N.J. in period 1 July 1948--15 Dec. 1951. No. PB-124255--Library of Congress, Wash. 25, D.C. (Microfilm: $7.20; Enlarged print: $24.30).

Russian-English Atomic Dictionary, by Eugene A. Carpovich. Covers nuclear science and technology, physics, mathematics, etc. Over 23,000 entries. --Technical Dictionaries Co., Box 144, New York 31, N.Y. ($12.00).

Atomic Energy in Canada, by Clyde C. Kennedy, public information office, AECL. New enlarged edition of this non-technical, illustrated account first published in 1955. --Atomic Energy of Canada, Ltd., Chalk River, Ontario, Canada. (C$1.00).

Nuclear Notes for Industry; Mar. 6, 1957. Latest compilation of USAEC-developed unclassified information of special industrial interest. --USAEC, Oak Ridge, Tenn. (n/c).

Labor-Management Relations at Atomic Energy Installations. Report of Secretary of Labor's advisory committee. No. L-1.2:At 7. (25¢)..... Field Determination of Uranium in Natural Waters. A semi-quantitative method for use in hydrogeochemical prospecting. No. I-19.3:1036-J. (15¢) --Sup't. of Documents, Wash. 25, D. C.

NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear plant & laboratory...

FROM MANUFACTURERS & PROCESSORS:- Radiation monitoring system (remote) is designed for monitoring radiation levels in several places from one central location. System has five elements, with modular design, permitting installations to be made from standard components. --Victoreen Instrument Co., Cleveland 3, Ohio.

Radiochemicals in solution form, with specific activities 10 to 100 times higher than the standard crystalline preparations, are now offered by this firm. Company says the new service is designed to aid radiochemical studies involving high dilution factors. --Schwarz Laboratories, Mt. Vernon, N.Y.

Added to this company's radiochemical list is D-mannose, with an activity of 20 millicuries per millimole. Projected uses are in metabolism, photosynthesis, and physiological studies of sugar systems. --Nuclear-Chicago Corp., Chicago 10, Ill.

New portable radiation survey meter, model GS-3W, is now available from this manufacturer. Suggested uses are in industrial, medical and research laboratories. --Nuclear Measurements Corp., Indianapolis, Ind.

MANUFACTURERS' SALES & SHIPMENTS:- One million electron-volt Van de Graaff particle accelerator has been sold by High-Voltage Engineering Corp., Burlington, Mass., to Department of the Army. It will be used by the Army's Quartermaster Research & Development Center, Natick, Mass., at its pioneering research division there, for studies of radiation chemistry of certain organic materials, radiation sterilization studies, and investigations of the effects of radiation on bacteria and fungi.

Foster-Wheeler Corp., New York, and Loretz & Co., Los Angeles, Calif., have applied to the USAEC for licenses to ship two nuclear research reactors to the Danish Atomic Energy Commission, Copenhagen, Denmark, for use at the Danish Government's nuclear research center being developed near Roskilde, about 20-miles west of Copenhagen. Foster-Wheeler plans to ship a 5,000-kilowatt tank type reactor with a value of $500,000. Loretz will ship a 500 watt solution type reactor, built by Atomics International division of North American Aviation, Canoga Park, Calif., valued at $157,000. (Mutual Security Agency has committed $350,000 of its funds toward the cost of the Danish nuclear research reactor project.)

EXPERIMENTAL USES OF NEW PRODUCTS:- Fatalities from radiation exposure were found to be significantly reduced by pre-administration of a new experimental drug in experimental work with laboratory animals at University of California, Los Angeles. The research, at the Atomic Energy Project there, was concerned with the drug quinoxaline 1,4-di-n-oxide. Untreated irradiated mice suffered 100% mortality at the end of 16 days, at the radiation dosages used. Mice receiving the drug, just prior to irradiation, had only 65% mortality after 30-days, at the same radiation dosages. (Postirradiation treatment with the drug reduced mortality rate only slightly.) It was found that part of the beneficial effects of the drug was due to reduction of intestinal bacteria, which multiply rapidly following radiation injury, causing acute bacteremia. Research work was done by Thomas Haley, Anna Flesher, R. Veomett, and J. Vincent.

NEW APPARATUS INSTALLATIONS:- New electron accelerators are planned for two nuclear research establishments in Great Britain. At Wantage, machine will be used to study radiation applications for food and drug sterilization, and certain chemical processing problems. The other accelerator, to be at Harwell, will develop 28 million electron-volts, with a power input of 36 megawatts, and will produce neutrons by bombarding uranium. Main use will be in investigations of the behavior of uranium and plutonium nuclei.

PEOPLE...in nuclear work...

Davis R. Dewey, II, has been elected president of Baird-Atomic, Inc., Cambridge, Mass., nuclear and other scientific instrument manufacturers. He succeeds Walter S. Baird, now chairman.

Harry L. Browne, former manager of the nuclear products department of Thompson Products, Inc., and before that with the USAEC and predecessor organization for 12-years, has joined General Atomic division of General Dynamics Corp. as assistant division manager.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

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